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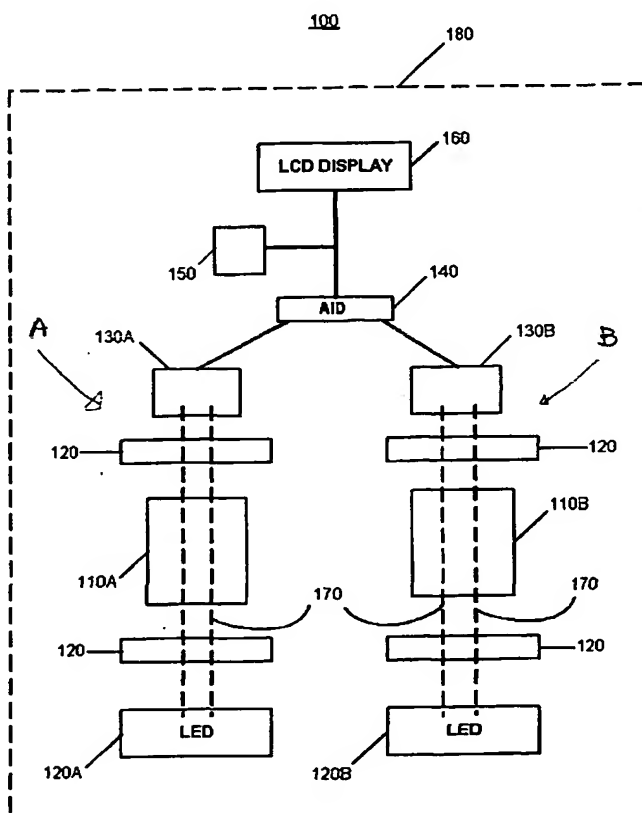
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(54) Title: AN ARSENIC METER



(57) Abstract: A field test-kit for analyzing arsenic concentration in water samples is provided. The kit includes a portable infrared beam photometer for measuring light absorbance in aqueous specimens. An infrared light emitting diode is configured to direct a beam of light through a specimen. A photodetector diode measures the intensity of light passing through the specimen. The photodetector output voltages relate to the light absorbed in the specimen and are displayed on a liquid crystal display screen. The kit is assembled using off-the-shelf electronic and opto-electronic components that have low power requirements. Dry cell batteries or solar cells power the kit. To test for arsenic, molybdenum based chemistries are used to selectively bind and convert arsenates and phosphates in the specimen into molybdenum-blue color complexes. The light absorbance of a specimen with both arsenates and phosphates bound in molybdenum-blue color complexes is compared to that of a reference specimen in which phosphates but not arsenates are bound and converted. The differential light absorbance of the two specimens is used to arrive at a quantitative value for the arsenic concentration in the water sample.